

## **Remarks**

Claims 1-22 are pending in the subject application. Reconsideration of the rejected claims in view of the following remarks is respectfully requested.

### **Claim Rejections - 35 U.S.C. § 102(b)**

The Examiner rejected claims 1-22 under 35 U.S.C. § 102(b), as being anticipated by U.S. Patent No. 5,971,585, hereinafter Dangat. The Examiner states that Dangat teaches of a computer implemented decision support tool that serves as a solver to generate a best can do match to produce production plans within manufacturing facilities and therefore, anticipates the limitations of Applicants' invention. This rejection is respectfully traversed.

To anticipate a claim, each and every element as set forth in the claim must be found, either expressly or inherently described, in a single prior art reference. MPEP §2131. Applicants submit that Dangat does not teach every feature of the claimed invention.

With regards to Applicants' independent claims 1 and 12, the present invention generally relates to a method and device for determining a production plan of feasible production starts such that the plan is consistent with discrete lot-sizing rules, production constraints, and operational objectives. The Examiner asserts that the step of sequencing production start variables based on start date, position in a bill-of-material, and degree of infeasibility is taught by Dangat in column 17, line 38 et seq.; wherein, the decision on matching variables as when used with linear programming technology is detailed. The Examiner further asserts that the step of modifying production starts in this sequence and according to a branching strategy, such that lot-size constraints and production constraints are satisfied, is taught by Dangat in column 17 at lines 51 through 55, where the variables are revised to satisfy capacity issues prior to being assigned.

Applicants respectfully disagree with the Examiner's assertions that Dangat teaches the limitations of sequencing production start variables based on start date, position in a bill-of-material, and degree of infeasibility; and the limitation of modifying production starts in this sequence and according to a branching strategy, such that lot-size constraints and production

constraints are satisfied.

Column 17, line 38 et seq.; of Dangat discloses "... many STARTs (starts for reverse low level code of one) are needed and when." Dangat does not teach sequencing based on degree of infeasibility. Dangat makes no mention whatsoever of sequencing production start variables based on "degree of infeasibility". Therefore, Dangat does not teach the limitation of "sequencing production start variables based on start date, position in a bill-of-material, and degree of infeasibility."

Column 17, line 51-55, of Dangat discloses "These revised STARTs are then examined in block 803 to determine if capacity problems (not enough capacity) exist. If a problem is identified, then capacity is assigned to the starts on a first come first serve basis by demand class and date." The Examiner indicates that the above reference anticipates the limitation of "modifying production starts in this sequence and according to a branching strategy, such that lot-size constraints and production constraints are satisfied." In Dangat there is no mention in the above referenced column and lines of using a branching strategy nor is there mention of lot-size constraints; therefore, Dangat cannot anticipate or teach the limitation of "modifying production starts in this sequence and according to a branching strategy, such that lot-size constraints and production constraints are satisfied."

With regards to Applicants' independent claims 7 and 18, the Examiner asserts that the limitations of claims 7-11 and 18-22 define the invention as claimed by instant claims 1-6 and 12-17, respectively, with the difference of separating the production variables into sub-problems and determining a solution to sub-problems which would lead to an improvement in the overall production planning process, and to that regard the Examiner asserts that the step of separating production start variables into a plurality of sub-problems is taught by Dangat in column 17, line 30.

Column 17, line 30, of Dangat discloses "(6) Enhanced time bucket controls which permit the user to define variable length time buckets, to turn on and off production splitting, and appropriately adjust the objective function to control for the unwanted side effects of overbuilding

and late delivery.”

Applicants respectfully disagree with the Examiner’s assertions that Dangat teaches the limitations of separating production start variables into a plurality of sub-problems. In Dangat the splitting of production starts into time periods (e.g. daily or weekly time buckets) has nothing to do separating production start variables into a plurality of sub-problems for the purpose of improving the production plan. Further, in Dangat, the described splitting of production starts into time periods has nothing to do with lot-sizing. Applicants’ independent claims 7 and 18 describe a method of improving the overall production plan by breaking the production start variables into sub-problems, solving an LP with relaxed lot-sizing constraints for the sub-problems, determining if the solution is feasible, and then updating the overall solution to reflect the local improvements from solving the sub-problems. Furthermore, Dangat does not relax imposed lot-sizing constraints and therefore does not teach the limitation of “relaxing imposed lot-sizing constraints using linear programming methods”.

Claims 2-6, 8-11, 13-17, and 19-22 are dependent upon Claims 1, 7, 12, and 18 respectively; and as discussed above, Claim 1, 7, 12, and 18, are not anticipated by Dangat because Dangat does not disclose all the elements of Claims 1, 7, 12, and 18. Therefore, Applicants respectfully submit that the rejection of Claims 1-22 under 35 U.S.C. 102(b) in view of Dangat has been overcome and it is respectfully requested that the pending claims be passed to issuance in view of the remarks.

Therefore, Applicants respectfully submit that the rejection of Claims 1-22 under 35 U.S.C. §102(b) in view of Dangat has been overcome and it is respectfully requested that the pending claims be passed to issuance in view of the amendments and remarks.

#### **Prior Art Made of Record and Not Relied Upon**

Applicants have reviewed the prior art made of record:

US Patent Application Publication No. US 2003/0208392 A1

Sheker et al.

US Patent Application Publication No. US 2003/0033180 A1

Sheker et al.

US Patent Application Publication No. US 2003/0216952 A1

Klett et al.

and respectfully submit that the prior art made of record does not anticipate, teach or suggest Applicants' independent claims 1, 7, 12 and 18.

### **Conclusion**

In light of the foregoing remarks, all of the claims now presented are believed to be in condition for allowance, and Applicants respectfully request that the outstanding rejections be withdrawn and this application be passed to issue at an early date.

The Examiner is urged to call the undersigned at the number listed below if, in the Examiner's opinion, such a phone conference would aid in furthering the prosecution of this application. No fee is due by virtue of this response. However, if the PTO determines that a fee is required, please charge Applicants' Deposit Account, 09-0456.

Respectfully submitted,

For: Denton, et al.

By: /Ryan Simmons/  
Ryan K. Simmons  
Registration No. 45,848  
Telephone No.: (802) 769-1809  
Fax No.: (802) 769-8938  
EMAIL: rksimmon@us.ibm.com

International Business Machines Corporation  
Intellectual Property Law - Mail 972E  
1000 River Road  
Essex Junction, VT 05452